Digital Camcorder

English

Welcome

Dear user, thanks for purchasing this product.
Much investment in time and effort has gone into its development,
and it is our hope that it will give you many years of trouble-free service.

Safety Notice

1. Do not drop, puncture or disassemble the camcorder; otherwise the warranty will be voided.

2. Avoid all contact with water, and dry hands before using.

3. Do not expose the camcorder to high temperature or leave it in direct sunlight. Doing so may damage the camcorder.

4. Use the camcorder with care. Avoid pressing hard on the camcorder body.

5. For your own safety, avoid using the camcorder when there is a storm or lightning.

6. Do not use batteries of different specifications. Doing so may lead to the potential for serious damage.

7. Remove the battery during long periods between usage, as a deteriorated battery may affect the functionality of the camcorder.

8. Remove the battery if it shows signs of leaking or distortion.

9. Use only the accessories supplied by the manufacturer.

10. Keep the camcorder out of the reach of infants.

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● Loading the battery

1 Open the battery compartment cover.
Open the LCD panel, and then push the drop prevention lever upward and open the cover.
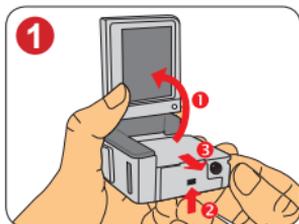
2 Install the battery.
Note the indication of the battery polar direction and align the metallic contacts on the battery with those in the compartment. Then install the battery into the compartment as indicated.

USB connector

Metallic contacts
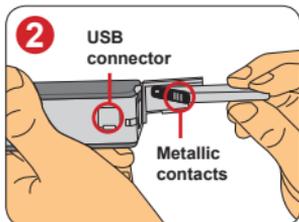
3 Replace the cover.
After the battery is properly installed, replace the battery compartment cover.

❗ Treat the Li-ion battery with care:
- Keep the battery away from fire or high-temperature environment (over 140º F or 60º C).
- Do not drop the battery or try to disassemble it.
- If the battery is not used for long periods, fully discharge and charge the battery at least once a year to maintain its life cycle.

❗ Upon using the battery for the first time, you are recommended to fully discharge and then charge the battery to ensure its life cycle.

❗ Purchasing additional batteries:
This camcorder uses one Nokia-6108 Li-ion battery as power source. You can purchase the Nokia-6108 Li-ion rechargeable battery (3.7 volt; 700mAh) at your local shop.

● Charging the battery

1 Plug the accessory AC adapter to a wall outlet or power on your computer.

You can use either the accessory AC adapter or your computer to charge the battery.
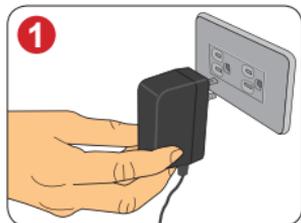
2 Connect the power cable or USB cable to your camcorder.

AC adapter:
You can use the camcorder as usual while the battery is being charged.

USB charging:
Connect one end of the USB cable to your computer and the other end to the camcorder. Select [Charger] in the pop-up menu, and then the charging will start.
Note: If the [USB Mode] setting is changed, the menu will not show up. See page 30 for more details.

3 The battery is being charged.

AC adapter:
If the camcorder is powered on, a 🔋 icon will display on the LCD screen, indicating charging in progress. When the battery is fully charged, the icon will change into 🔋.

USB charging:
The LED light will flash rapidly. As the battery is gradually getting power, the flash will get more and more slowly. When the battery is fully charged, the LED will emit steady light.

4 Unplug the power cable or USB cable when charging is completed.


```
━Disk
◎ PC Cam
▬ Charger
🖶 Printer
```

Select [Charger] for USB charging

● Inserting a memory card (optional)

In addition to the internal flash memory, your camcorder can also store data on a Secure Digital (SD) card or a MultiMedia card (MMC).

Insert a memory card:
To insert a memory card, first open the cover on the bottom of the camcorder, and then gently push the card into the card slot as indicated until the card reaches the end of the slot.
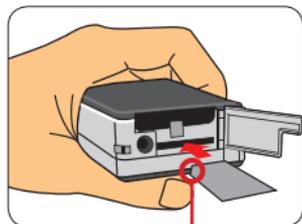
Beveled corner

Remove a memory card:
To remove the memory card, gently push the memory card for the card to pop up. Then pull the card out of the slot.

Note: The SD card comes with a write-protect switch. When the write-protect switch is set to the Lock position, the card will become non-writable. To ensure that the camcorder can operate normally, you should set the write-protect switch to the Unlock position before inserting the SD card.

Unlock

Lock
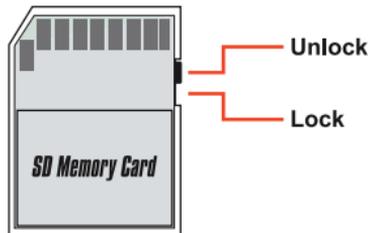
SD Memory Card

❗ When a memory card is correctly inserted and detected, the card icon (🗔) will display on the LCD screen.

❗ Do not insert or remove the memory card while the camcorder is reading or writing data.

❗ When a memory card is inserted, the camcorder will use the card as the main storage medium. Files stored in the built-in memory will become inaccessible until the memory card is removed.

❗ If you purchase a new memory card, you are recommended to format the card with this camcorder before storing data into the card.

● Using the strap (optional)

1 Thread the thin strap loop through the hook.

Thread the thinner part of the strap loop through the strap hook as indicated. Using a small tool, such as a pin or needle, can be handy for completing the task.
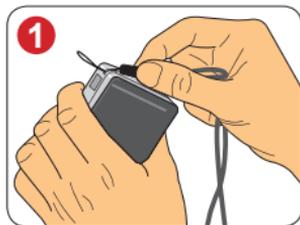
2 Thread the strap body through the loop.

Thread the other end of the strap through the loop, and you are ready to carry your camcorder around with ease.

Basic Operations

● **Turning on/off your camcorder**

Press the power (⏻) button for 1 second to turn on the camcorder.
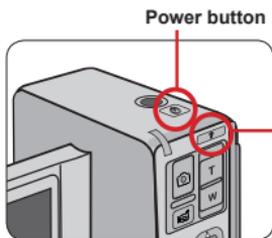
Power button

After power on, pressing the Help button can provide instant button tip for your operation.

> ❶ If the camcorder is not powered on after pressing the power button, please check:
> 1. The battery is correctly installed into the camcorder.
> 2. The battery has enough power left.

❖ **Turning off the camcorder**

Press the power (⏻) button for 1.5 second to turn off the camcorder.
Note: If the camcorder stays inactive for a long period of time, it may automatically shut down due to the [Power Off] setting. See page 30 for more details.

❖ **Flipping the LCD panel**

The LCD panel can be flipped up to 270 degrees as indicated. You can position the panel at any angle to serve your filming purpose.
Note: When the LCD panel is flipped over, the previewed image on the LCD will be automatically adjusted.

270°
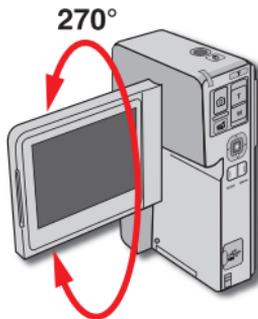
Reading LCD indicators (1)

❖ DV/DSC mode

To enter the DV/DSC mode, press the Mode/Return (🔁) button and use the Joystick ($\Delta\nabla$) to highlight the DV/DSC mode. Then move the Joystick toward right ($\triangleright$) to confirm.
Note: The camcorder automatically enters DV/DSC mode when it is powered on.
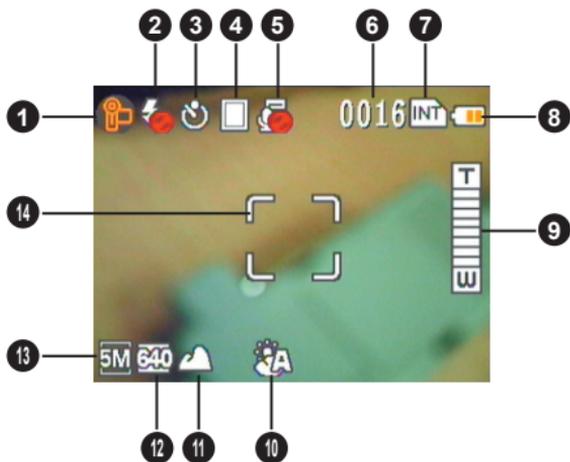
1 Mode icon	**8** Battery power
2 Strobe mode	**9** Zoom ratio
3 Selftimer mode	**10** White balance mode
4 Effect mode	**11** Focus mode
5 Voice memo mode	**12** Movie size
6 Remaining shots	**13** Image size
7 Storage medium icon INT : internal memory 🗂 : memory card	**14** Focus frame

● Reading LCD indicators (2)

❖ Playback mode

To enter the Playback mode, press the Mode/Return (🔲) button and use the Joystick (△▽) to highlight the Playback mode. Then move the Joystick toward right (▷) to confirm.

PICT0002.JPG
979K Bytes
2006/01/10 21:48

▼ Next T Zoom W Index

Index view

1 Mode icon

2 File type icon

3 Current file/All files

4 Storage medium icon
INT : internal memory
▢ : memory card

5 Battery power

6 File information

7 Button tip

Reading LCD indicators (3)

❖ MP3 mode

To enter the MP3 mode, press the Mode/Return (🔁) button and use the Joystick (△▽) to highlight the MP3 mode. Then move the Joystick toward right (▷) to confirm.
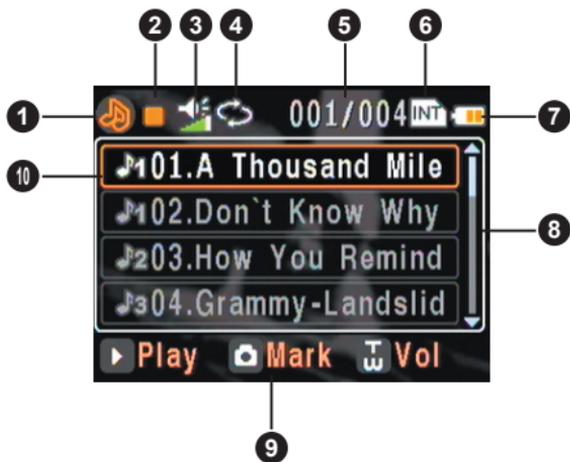
1 Mode icon	**7** Battery power
2 Play/Pause/Stop icon	**8** Song list
3 Sound volume	**9** Button tip
4 Repeat mode	**10** Highlight box
5 Current song/All songs	
6 Storage medium icon	
⟦INT⟧ : internal memory	
⟦🗀⟧ : memory card	

● Reading LCD indicators (4)

❖ Voice Recorder mode

To enter the Voice Recorder mode, press the Mode/Return (🔄) button and use the Joystick (△▽) to highlight the Voice Recorder mode. Then move the Joystick toward right (▷) to confirm.

1 Mode icon	**5** Battery power
2 Sound volume	**6** Voice clip list
3 Current file/All files	**7** Button tip
4 Storage medium icon INT : internal memory ▢ : memory card	**8** Highlight box

● Setting clock and language

When you power on the camcorder for the first time, you are recommended to adjust the clock and language settings.

❖ Setting clock:

1 **Power on the camcorder.**

2 **Press the Mode/Return ( ) button to enter mode selection scenario.**

3 **Use the Joystick ($\triangle\nabla$) to select the [Settings] mode, and move the Joystick toward right ($\triangleright$) to confirm.**

4 **Use the Joystick ($\triangle\nabla$) to select the [Clock] item, and move the Joystick toward right ($\triangleright$) to confirm.**

5 **Use the Joystick ($\triangleleft\triangleright$) to move the highlight box. Use the Joystick ($\triangle\nabla$) to change the value in the highlight box. When all settings are done, press the Mode/Return ( ) button to exit the menu.**

❖ Setting language (continued):

6 **Use the Joystick ($\triangle\nabla$) to highlight the tab and then move the Joystick toward right ($\triangleright$) to highlight the tab.**

7 **Use the Joystick ($\triangle\nabla$) to select the [Language] item, and move the Joystick toward right ($\triangleright$) to confirm.**

8 **Use the Joystick ($\triangle\nabla$) to select your desired language, and move the Joystick toward right ($\triangleright$) to confirm.**

Recording a video clip

1 Power on the camcorder.
The camcorder automatically enters DV/DSC mode.

2 Set the focus and zoom as appropriate.
Use the Zoom ($\frac{T}{W}$) button to zoom in or zoom out.
Move the Joystick down (∇) to cycle through different focus modes:

☺: about 40cm ~ 100cm

👤: about 100cm ~ 200cm

⛰: about 200cm ~ ∞

3 Set other advanced items if necessary.
Press the Menu/OK ($\frac{MENU}{/OK}$) button to open the settings menu and fine-tune your camcorder. See page 23 for more details.

4 Press the Record (▣) button to start recording.
While recording, you can do any of followings:
1) Use the Zoom ($\frac{T}{W}$) button to zoom in or zoom out.
2) Move the Joystick down (∇) to change the focus mode as appropriate.
   Note: Changing focus will produce some noise.
3) Press the Record (▣) button to pause/resume the recording.

Stop recording — Zoom in/out

Start/Pause/ Resume recording

Toggle OSD mode — View last recording — Change focus
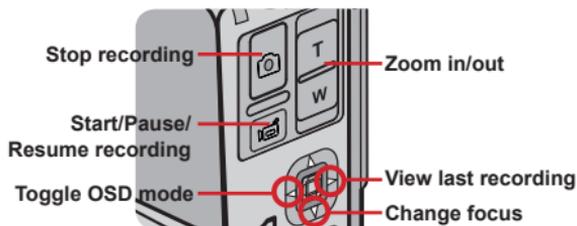
5 Press the Shutter (▢) button to stop recording.
The video clip will be saved in MPEG4 (ASF) format.

Taking a still picture

1 Power on the camcorder.
The camcorder automatically enters DV/DSC mode.

2 Set the zoom as appropriate.
Use the Zoom ($\frac{T}{W}$) button to compose the picture as you like it.

3 Set the strobe and selftimer if necessary.
Move the Joystick upward (Δ) to cycle through different strobe and selftimer modes:

- : The strobe is off. It will not fire even in dark surroundings.
- : The strobe is set to auto. If the lighting is not enough, the icon will turn yellow when you press the shutter halfway, and then the strobe will fire when you fully press the shutter down.
- : The strobe is on. It will fire in every shot.
- : The selftimer is on. After pressing the Shutter ( ) button, the camcorder will have ten seconds delay before taking a picture.

4 Set other advanced items if necessary.
Press the Menu/OK ( ) button to open the settings menu and fine-tune your camcorder. See page 24 for more details.

5 Press the Shutter ( ) button halfway down and hold the button for the camcorder to auto-focus.
When the auto-focus process is done, the color of the focus frame will turn green.

6 Press the Shutter ( ) button fully down to take a still picture.
The picture will be saved in JPEG format.

Auto-focus/Take a picture

Zoom in/out

Toggle OSD mode

Change strobe and selftimer modes

View last recording
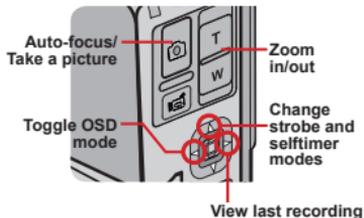
● Recording a voice clip

1 Power on the camcorder and switch to Voice Recorder mode.

Power on the camcorder. Press the Mode/Return (🔳) button and use the Joystick (Δ∇) to highlight the Voice Recorder mode. Then move the Joystick toward right (▷) to confirm.

2 Press the Record (🔚) button to start recording

While recording, you can press the Record (🔚) button to pause/resume the recording.

3 Press the Shutter (◎) button to stop recording.

The voice clip will be saved in WAV format.

Stop recording

Start/Pause/ Resume recording

● Playing back your recordings

1 Power on the camcorder and switch to Playback mode.

Power on the camcorder. Press the Mode/Return (🔁) button and use the Joystick ($\Delta\nabla$) to highlight the Playback mode. Then move the Joystick toward right ($\triangleright$) to confirm.

2 Identify file type.

You can tell what kind of file you are browsing by looking at the file type icon on the upper left side of the screen.

- 🎬 : Video clips (in ASF format).
- 📷 : Still pictures (in JPEG format).
- 🔊 : Still picture with voice note.
- 🎤 : Audio clips (in WAV format).

3 Operations in playback mode:

File Type / View	Button	Function
All (preview)	Zoom-W	Switch to file Index view.
	Joystick	Move up or down to shift between files.
File index view (cannot play file)	Zoom-T	Switch to full screen view.
	Joystick	Move the file highlight box.
Still picture	Zoom-T	Zoom in the picture
	Zoom-W	Zoom out the picture (when zoom ratio is greater than 1.0).
	Joystick	When zoom ratio is greater than 1.0, use the Joystick to browse the enlarged picture.
	Record/Shutter	Start/Stop playing voice note. (🔊 only)
Audio & Video	Record	Start playing the file.
Audio & Video (when playing)	Record	Pause/Resume playing.
	Joystick	Move left or right to fast-backward or fast-forward playing.
	Shutter	Stop playing.
	Zoom-T/W	Turn sound volume up/down.

Playing MP3 music (1)

❖ Copy MP3 files to the camcorder

Before playing MP3 music, you need to connect the camcorder to a computer and save MP3 files into the camcorder.

1 Connect the camcorder to your PC.
Connect the camcorder to a PC using the USB cable. For details on how to connect the camcorder to your PC, see page 35.

2 Switch the camcorder to [Disk] mode.
After the camcorder is connected to the PC, the camcorder will be powered on. Select [Disk] item from the pop-up menu and move the Joystick toward right (▷) to confirm.
Note: If the [USB Mode] setting is changed, the menu will not show up. See page 30 for more details.

3 Copy files to the camcorder.
Double-click on [My Computer] and you will find a removable disk. Create one [MP3] folder in the removable disk if you do not see one, and then you are ready to copy MP3 files into the folder for playing.
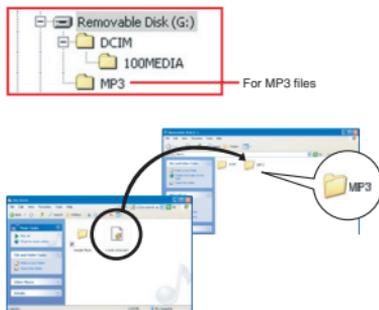
❗ If you are a Windows 98SE user and your computer cannot correctly detect the camcorder, you may need to install the driver first. See page 33~34 for more details.

❗ MP3 files must be placed in the [MP3] folder for playing.

❗ You can play MP3 songs with lyrics displayed. To enable the function, you need to copy LRC format files into the [MP3] folder, and name the LRC files after their matched songs. For example, if a song is named A.MP3, then the LRC file should be named A.LRC. You can search the Internet for your desired lyrics files.

● Playing MP3 music (2)

❖ Playing music in MP3 mode
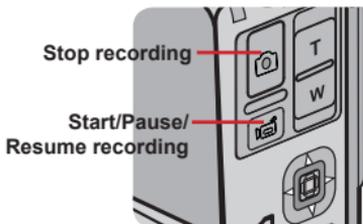
1 Power on the camcorder and switch to MP3 mode.
Power on the camcorder. Press the Mode/Return ( ) button and use the Joystick (△▽) to highlight the MP3 mode. Then move the Joystick toward right (▷) to confirm.

2 Sorting MP3 files.
The MP3 files are sorted by albums, artists, or favorite group 1~3. The album and artist attributes are constituted by the ID3 tag stored along with the specific MP3 file. The favorite groups can be defined manually, and therefore you can sort your songs into different favorite groups.

3 Operations in MP3 mode:

File Type	Button	Function
MP3 (not playing)	Record or Joystick (▷)	Start playing the title.
	Shutter	Mark the song as Favorite group 1~3.
	Zoom-T/W	Turn sound volume up/down.
MP3 (when playing)	Record	Pause/Resume playing.
	Joystick	Move left or right to fast-backward or fast-forward playing.
	Shutter	Stop playing.
	Zoom-T/W	Turn sound volume up/down.

❶ When playing MP3 music, you may close the LCD panel, thus turning off the display to save power.

Viewing the display on a TV

Connect your camcorder and TV via the accessory AV cable for real-time display. You can display your video clips, still pictures, and audio recordings directly on your TV, sharing them with your friends and family.
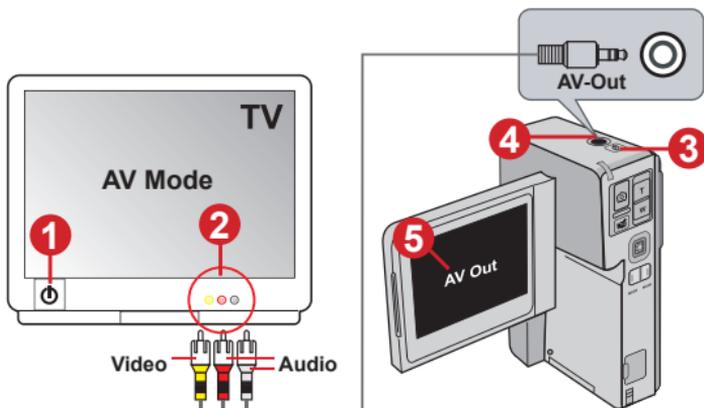
1 Turn on your TV and switch the TV to AV mode.

2 Connect the audio and video ends of the AV cable to the [Video/Audio In] ports on the TV.

3 Power on the camcorder.

4 Connect the other end of the AV cable to your camcorder.

5 Select the [AV Out] item on the pop-up menu. Move the Joystick toward right (▷) to confirm.

Note: If the [AV Mode] setting is changed, the menu will not show up. See page 30 for more details.

Advanced Operations

● Menu operation

The menu items provide several options for you to fine-tune your camcorder functions. The following table gives details on menu operations.

How to...	Action
Bring up the menu	Press the Menu/OK (MENU/OK) button.
Move the highlight box	Use the Joystick to move up or down.
Enter sub-menu/ Confirm an item	Press the Menu/OK (MENU/OK) button or move the Joystick toward right (▷).
Exit menu/Go back to upper menu	Press the Mode/Return (MODE) button

● Menu illustration

Working tab ————

Highlight box ————

Beep	On
Boot Movie	On
Power Off	Off
Clock	21:56

↰ **Back** ↕ **Move** ▶ **Set**

———— **Shaded tab***

———— **Menu items**

Button tip ————

Note: If the shaded tab is present, it indicates there are more items can be selected and adjusted in the tab. To access those items, move the highlight box to the tab row and switch to the shaded tab.

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Menu items in DV/DSC mode (1)

Power-on → Press the Menu/OK (🔲) button.

(🖳 - DV items)		
Item	**Option**	**Description**
Movie Size	VGA	Set movie resolution to 640x480.
	QVGA	Set movie resolution to 320x240.
WB (White Balance)	🌦 Auto	The camcorder automatically adjusts white balance.
	☀ Sunny	This setting is suitable for outdoor recording in sunny weather.
	☁ Cloudy	This setting is suitable for recording in cloudy weather or shady environments.
	🔆 Fluorescent	This setting is suitable for indoor recording with fluorescent lamp lighting, or environments with high color temperature.
	💡 Tungsten	This setting is suitable for indoor recording with incandescent lamp lighting, or environments with low color temperature.
Effect	Normal	Make recordings in natural color.
	Classic	Make recordings in sepia-toned color.
	Black&White	Make recordings in black and white.
EV (Exposure Value)	+3 ~ -3	Manually adjust the exposure to gain better effect when the preview image appears too bright or too dark. A positive value indicates the image will be brighter than usual; while a negative value makes the image dimmer.
Stabilizer	On/Off	Enabling the stabilizer can reduce image blur caused by hand shaking.

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Menu items in DV/DSC mode (2)

(📷 - DV items)		
Item	**Option**	**Description**
Digital Zoom	4x	Set the maximum digital zoom ratio to 4x. This setting is suitable for normal use.
	10x	Set the maximum digital zoom ratio to 10x. This setting is suitable for telephoto.
Night Scene	On/Off	This setting allows you to take video clips in a dark background.

(📷 - DSC items)		
Item	**Option**	**Description**
Image Size	10M	Set picture resolution to 3584x2688. Print up to 8"x12" photos.
	8M	Set picture resolution to 3264x2448. Print 8"x10" photos.
	6M	Set picture resolution to 2832x2128. Print 6"x8" photos.
	5M	Set picture resolution to 2592x1944. Print 5"x7" or 6"x8" photos.
	3M	Set picture resolution to 2048x1536. Print 4"x6" or 5"x7" photos.
	VGA	Set picture resolution to 640x480. Taken pictures are suitable for viewing on the computer screen.

● Menu items in DV/DSC mode (3)

(📷 - DSC items)		
Item	**Option**	**Description**
Add Voice Note	On/Off	When enabled, you will be prompted to add a voice note after every shot. Recording voice notes lets you add voice memos to your pictures. Here are some tips on using this feature: 1. Each voice note lasts up to 10 seconds. 2. You can add the voice note immediately after every shot or later when you review the picture in Playback mode. 3. For one picture, only one voice note can be added. When you review a picture with a voice note, you can record a new voice note to replace the previous one. 4. You can delete the voice note in Voice Recorder mode. The still picture itself will stay intact.
EV (Exposure Value)	+3 ~ -3	Manually adjust the exposure to gain better effect when the preview image appears too bright or too dark. A positive value indicates the image will be brighter than usual; while a negative value makes the image dimmer.
WB (White Balance)	🎏A Auto	The camcorder automatically adjusts white balance.
	☼ Sunny	This setting is suitable for outdoor shooting in sunny weather.
	☁ Cloudy	This setting is suitable for shooting in cloudy weather or shady environments.
	🎏 Fluorescent	This setting is suitable for indoor shooting with fluorescent lamp lighting, or environments with high color temperature.
	🎏 Tungsten	This setting is suitable for indoor shooting with incandescent lamp lighting, or environments with low color temperature.

● Menu items in DV/DSC mode (4)

(📷 - DSC items)		
Item	**Option**	**Description**
Effect	Normal	Take pictures in natural color.
	Classic	Take pictures in sepia-toned color.
	Black&White	Take pictures in black and white.
Date Stamp	On/Off	Enable this feature to print a date mark on each picture.
Multi-shot	On/Off	Enabling this feature will allow you to take multiple shots when pressing down and holding the shutter. The number of shots is limited by the memory space. Note that when shooting in dark surroundings, only the first shot will have the strobe triggered.
Panorama	On/Off	When this feature is enabled, every time you take a still picture, a small portion of the picture will appear on the left side of the screen, allowing you to compose your next shot to match the scene. Later you can edit those pictures on a PC and "stitch" them into a panorama image.
Strobe Warning	On/Off	Enabling this feature and you will see a message reminding you not to block the strobe if the strobe is to be triggered.
Digital Zoom	4x	Set the maximum digital zoom ratio to 4x. This setting is suitable for normal use.
	10x	Set the maximum digital zoom ratio to 10x. This setting is suitable for telephoto.
Night Scene	On/Off	This setting allows you to take a photograph with a dark background. Since the shutter speed will slow down when taking photographs at a dark place, we recommend using a tripod to eliminate blurring from hand shake.

● Menu items in Playback mode

Power-on → Press the Mode/Return (📳) button. → Enter the Playback (📷) mode → Press the Menu/OK (📋) button.

Item	Option	Description
Delete One	Yes/No	Delete current picture (and voice note), video, or audio file.
Delete All	Yes/No	Delete all pictures, voice notes and video/audio files stored in the memory.
File Sort	📼 All	Display all types of recordings.
	📷 Still	Display only still pictures.
	🎬 Video	Display only video clips.
	🎙 Audio	Display only audio clips.
File Info	On/Off	Enabling this feature to view file information such as file name, file size, date...etc.
Add Voice Note	Yes/No	Add a voice note for a still picture. If there is already a voice note for the picture, adding a new one will replace the old one. This feature only applies to JPEG pictures.
Icon	On/Off	Enabling this feature to view your recordings without seeing extra OSD icons on the LCD screen, giving you a more clear sight.

● Menu items in MP3 mode

Power-on → Press the Mode/Return (🕮) button. → Enter the
MP3 (🎵) mode → Press the Menu/OK (🔘) button.

Item	Option	Description
Repeat	🔁 All	Repeat playing all titles in current list.
	🔂 Single	Repeat playing the current title over and over again.
	🔀 Random	Repeat playing all titles in current list at random order.
	Off	Do not repeat playing. The music will stop after all titles are played.
EQ	Off ~ 15 EQ settings	Select one of the pre-defined EQ settings from the menu. You can set an EQ best suits the music you are playing, or turn the EQ off to enjoy the original flavor.
Sound Effect	Stereo	Process sound signals on both left and right channels, thus producing stereo output. If both channels contain mono signals, the output will be mono.
	Left	Process sound signals on the left channel and bypass signals on the right channel.
	Right	Process sound signals on the right channel and bypass signals on the left channel.
	Vocal Remove	Turn down the vocal level of the song, thus resembling Kara OK effect.
Key Lock	On/Off	When enabled, all buttons will be locked after you play MP3 for 10 seconds without pressing any button. To regain control, press any button and you will be prompted to press the Mode button. Then press the Mode button to disable key lock. Note that the use of remote controller is not affected by this setting.

● Menu items in Voice Recorder mode

Power-on → Press the Mode/Return (MODE) button. → Enter the Voice Recorder (♀) mode → Press the Menu/OK (MENU /OK) button.

Item	Option	Description
Compression	uLaw	Compress the sound data to save memory space at the expense of sound quality.
	PCM	Sound quality stays intact. Producing higher quality sound at the expense of memory space.
Sampling Rate	8K ~ 44K	Set the audio sampling rate. The higher the value is, the better the sound quality will be.
Delete	One	Delete current voice recording.
	All	Delete all voice recordings.

❗ If you had recorded any voice notes for your still pictures, those voice notes wound appear in the list in Voice Recorder mode. The voice notes are treated as normal voice recordings and you can delete them as well. See page 25 for more details.

Menu items in Settings mode (1)

Power-on → Press the Mode/Return (<img>) button. → Enter the
Settings (<img>) mode → Press the Menu/OK (<img>) button.

Item	Option	Description
Beep	On/Off	Toggle beep sound on/off when you press a button.
Boot Movie	On/Off	Enable/Disable the movie sequence when the camcorder is powered on.
Power Off	Off ~ 5min	Set how long the camcorder will automatically shut down when staying inactive. Setting to [Off] will make the camcorder stay powered on until it runs out of power.
Clock	-	Set date and time.
USB Mode	Menu	When connected to a PC, the camcorder displays a menu for you to choose a desired connection mode.
	Disk	When connected to a PC, the camcorder automatically enters [Disk] (removable disk) mode.
	PC Cam	When connected to a PC, the camcorder automatically enters [PC Cam] mode.
	Charger	When connected to a PC, the battery charging automatically starts.
	Printer	When connected to a PictBridge compatible printer, the camcorder automatically enters [Printer] mode.
AV Mode	Menu	When connected to a device, the camcorder displays a menu for you to choose the connection mode.
	Headphone	When connected to a device, the camcorder automatically enters [Headphone] connection mode.
	AV Out	When connected to a device, the camcorder automatically enters [AV Out] connection mode.
	AV In	When connected to a device, the camcorder automatically enters [AV In] connection mode.

● Menu items in Settings mode (2)

Item	Option	Description
Language	-	Set the OSD (on screen display) language.
TV Type	NTSC	This option is suitable for America, Taiwan, Japan, and Korea areas.
	PAL	This option is suitable for Germany, England, Italy, Netherlands, China, Japan, and Hong Kong.
Flicker	50Hz/60Hz	Set flicker frequency to 50Hz or 60Hz. See page 45 for more details.
File Browse	-	Starts a mini program that allows you to manage files stored in the memory. This feature is handy for managing MP3 files or other data you save in the memory for temporary use, as those files do not appear in Playback mode. Press the Menu/OK ( ) button to bring up the [Delete] menu. Use the Joystick to confirm the deletion.
Format	Yes/No	Format the storage medium. Note that all files stored in the medium will be gone.
Reset Default	Yes/No	Restore factory defaults. Note that your current settings will be overridden.

● Menu items in Settings mode (3)

❗ Before using the [Printer] command in the [USB Mode] menu, you need to connect the camcorder to a PictBridge compatible printer via the accessory USB cable:

1) Power on the camcorder.

2) Set the camcorder USB mode to [Printer] (page 30).

3) Open the connector cover and connect one end of the accessory USB cable to the camcorder.

4) Connect the other end of the USB cable to the printer.
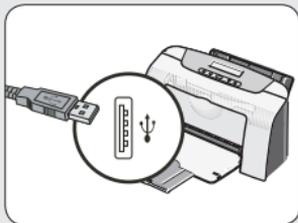
5) Power on the printer.

Copying Files to Your PC

⬤ **Installing the driver to your PC (1)**

You need to install the camcorder driver to ensure that video clips can be played back on your PC. To install the software:

1 **Insert the driver CD.**
Turn on your computer. Then place the accessory CD into the CD-ROM drive.
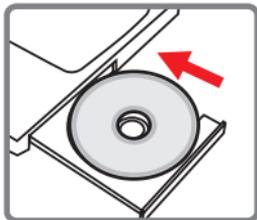
> ❗ Do not connect the camcorder to your computer at this stage.
>
> ❗ Shut down all other applications running on your computer.
>
> ❗ If the autorun screen does not appear automatically, double-click on **My Computer** and then the CD-ROM drive. Then start the *Setup.exe* program manually.

2 **Start the installation.**
Click on the 🟠 icon to launch the installation of the driver.

> ❗ **Notice for Windows 2000 users:**
> During the installation process, a warning message regarding digital signature may appear twice or more. Please click on **Yes** to continue the process. The software is fully compatible with Windows 2000 operation system.

● Installing the driver to your PC (2)

3 Install the driver.
The **Install Shield Wizard** will then appear and automatically install the program. Click on **Next** and follow the on-screen instructions to complete the installation.

4 Install codecs.
After the driver installation is completed, the program will prompt you to install **Windows Media Player Codecs**. If you are not sure whether the codecs have been installed in your computer, please click on **Yes** and follow the on-screen instructions to complete the installation.

5 Install Direct X 9.0c or above.
After the codecs installation is completed, you will be prompted to install **Direct X 9.0c** or above if the program is not yet installed in your computer. Please click on **Yes** to continue.

> ❗ *Windows Media Player Codecs* and *Direct X 9.0c* or above are necessary for viewing the video clips recorded by the camcorder.
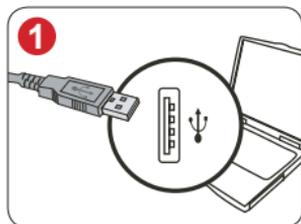
6 Restart the computer.
After the installation is completed, you may need to restart your computer for the driver to take effect.

Connecting the camcorder to your PC

1 Power on your computer and connect one end of the USB cable into the computer.

Make sure the connector and the USB port are correctly aligned.

2 Connect the other end of the USB cable to the camcorder.

The camcorder will be powered on. Select the [Disk] item from the pop-up menu and move the Joystick toward right (▷) to confirm.

Note: If the [USB Mode] setting is changed, the menu will not show up. See page 30 for more details.

Select [Disk] for mass storage

⚠ **Notice for Windows 2000/XP/ME users:**
If you want to disconnect the camcorder from your computer, please follow these steps:
1. Double-click 🥅 in the system tray.
2. Click 🖧 (USB Disk), and then click **Stop**.
3. Select the camcorder when the confirmation screen appears and click **OK**.
4. Follow the on-screen instructions to safely disconnect the camcorder from your computer.

● Copying files to the PC (1)

1 This step varies depending on your operation system:

For Windows XP users:
After the camcorder is connected to your computer, a dialogue window will appear automatically. Please select the item **Open folder to view files using Windows Explorer** and click **OK**.

For Windows 2000/ME/98SE users:
Double-click on **My Computer**. Then double-click on the icon of the removable disk that has just appeared.
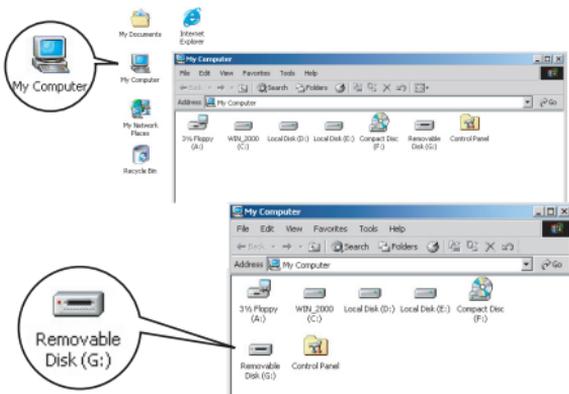
Copying files to the PC (2)

2 Double-click on the **DCIM** file folder.

Windows XP
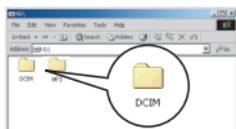
Windows 2000/ME/98 SE

3 Double-click on the **100MEDIA** file folder.

Windows XP

Windows 2000/ME/98 SE

4 Drag the target file into **My Documents** or the destination folder.

Windows XP

Copy pictures to "My Documents"

37
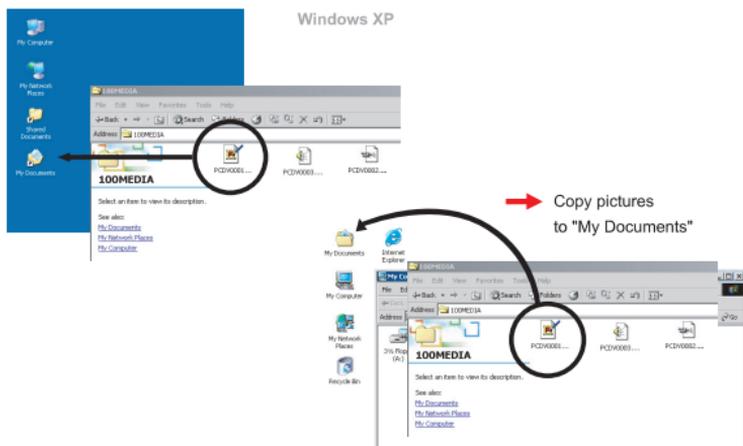
● Viewing/Playing files on your PC

1 **Double-click on My Documents or any other folder
that stores your files.**

Windows XP

Windows 2000/ME/98 SE

2 **Double-click on the desired file, and the file will be
opened by the program matching the file type.**

Windows XP
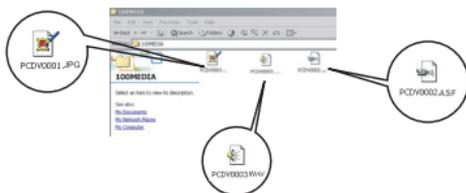
Windows 2000/ME/98 SE

● File location

After connecting the camcorder to your computer, a removable disk will appear in your computer. The removable disk actually represents the storage medium of your camcorder. In the disk you can find all of your recordings. Refer to the figure below to see where the files are stored.

```
Folders
📝 Desktop
⊞ 📄 My Documents
⊟ 💻 My Computer
   ⊞ 💾 3½ Floppy (A:)
   ⊞ 🖴 WIN_2000 (C:)
   ⊞ 🖴 Local Disk (D:)
   ⊞ 🖴 Local Disk (E:)
   ⊞ 🔍 V23 (F:)
   ⊟ 🖴 Removable Disk (G:)
      ⊟ 📁 DCIM
         📁 100MEDIA ── **For multimedia files.**
         📁 MP3 ──────── **For MP3 files.**
   ⊞ 🎛 Control Panel
⊞ 🖧 My Network Places
```
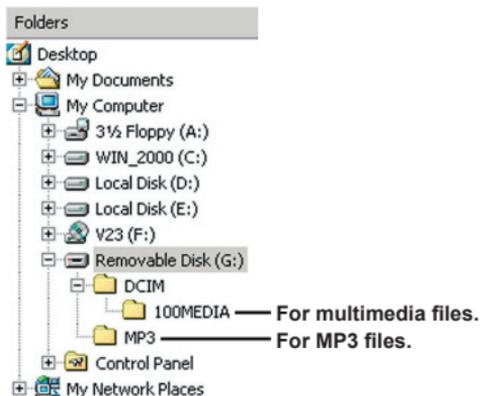
Using PC Camera

● **Installing the driver and PC Camera software**

To take advantage of the PC Camera function, you need to install the driver as well as a suitable software that supports Webcam utility. You can choose and install your own favorite software (ex. MSN Messenger, Yahoo Messenger…) for the purpose. For driver installation, please see page 33.

● **Starting the application (1)**

2 **Switch the camcorder to [PC Cam] mode.**
The camcorder will be powered on. Select the [PC Cam] item from the pop-up menu and move the Joystick toward right (▷) to confirm.

Note: If the [USB Mode] setting is changed, the menu will not show up. See page 30 for more details.

> ● If you want to use the Video Conferencing function, please install programs such as *Netmeeting* to serve the purpose.

☛ **Notice for Windows ME users:**
When the indicated screen appears, please select **Automatic search for a better driver** and click **Next** to continue.

using pc camera

⬤ Starting the application (2)

👉 **Notice for Windows 98SE users:**

1. Click **Next** when the following screen appears.

2. When the following screen appears, select **Search for the best driver for your device** and click **Next** to continue.

3. During installation, some users may need to insert a licensed 98SE CD into the CD-ROM drive for copying the needed files.

4. Follow the on-screen instructions to complete the installation.

👉 **Notice for Windows 2000 users:**
When using the PC camera function for the first time, the warning message regarding digital signature may appear twice or more. Please click **Yes** to continue the installation. The camcorder is fully compatible with Windows 2000 operation system.

3 Launch the PC Camera program.
After the camcorder is correctly connected to and detected by your PC, you are ready to launch the PC Camera program to capture and edit your own films.

using pc camera

Appendix:A

❖ **Troubleshooting**

When using the camcorder:		
Problem	**Cause**	**Solution**
The camcorder can not be powered on normally.	The battery is out of power.	Replace or recharge the battery.
	The battery are incorrectly installed.	Re-install the battery.
The camcorder is still powered on, but the LCD screen does not display.	It may happen that you move the Joystick toward left several times and thus turn off the display.	Move the Joystick toward left again to regain display.
Can not take pictures or video clips when pressing the Shutter or Record button.	Out of memory.	Free some space from the SD/MMC card or the internal memory.
	The camcorder is recharging the flash strobe.	Wait until the flash strobe is fully charged.
	Using a "protected" SD card.	Set the SD card to be writable.
The LCD screen displays "MEMORY ERROR" or "CARD ERROR" message. Or the camcorder cannot read the memory card.	The format of the memory card is not compatible with the camcorder.	Use the camcorder "Format" function to format the card.
	The memory card is corrupted.	Replace the memory card with a new one.

Appendix:A

When using the camcorder:		
Problem	**Cause**	**Solution**
I did not delete the pictures and video clips, but can not find them in the memory card.	The lost recordings are saved in the internal memory.	It happens when you insert a memory card after taking a few pictures or video clips. You can access those files after removing the memory card.
Cannot use the flash strobe.	If the battery icon indicates low battery, the flash strobe may be disabled due to insufficient voltage.	Replace or recharge the battery.
The camcorder does not respond to any action during operation.	The camcorder encounters software failure.	Remove the battery and replace it into the compartment. Then power on the camcorder.
The recorded pictures appear too blurred.	The focus is not correctly set.	Adjust the focus to an appropriate position.
The recorded pictures or video clips appear too dark.	The environment of shooting or recording does not have adequate light.	Use flash strobe when taking pictures. Add extra light sources when recording video clips.
Noises occur when viewing images on the LCD screen or on the computer.	The flicker setting does not match the standard of the country you are staying.	Adjust the flicker setting. For more information, please refer to the "Flicker Settings" table on page 45.

Appendix:A

When connecting the camcorder to the computer or TV:		
Problem	**Cause**	**Solution**
I cannot view the video clips on my computer.	Driver or software is not installed on the computer.	Install *Direct X 9.0c* or above and *Windows Media 9.0 Codecs* to solve this problem. See page 33 for details on installing the software, or go to http://www.microsoft.com to download the required files.
Driver installation failed.	The installation is terminated abnormally.	Remove the driver and other related programs. Follow the installation steps in the manual to re-install the driver.
	The camcorder has been connected to the PC via the USB cable before installing the driver.	Install the driver before plugging in the USB cable.
The TV screen does not display after connecting the camcorder to the TV.	The camcorder is not correctly connected to the TV.	Reconnect the camcorder to TV correctly.
A conflict with other installed camcorder or capture device occurred.	The device is not compatible with the camcorder.	If you have any other camcorder or capture device installed in your computer, please completely remove the camcorder and its driver from the computer to avoid the conflict.
Noises occur on my computer screen when using Video Conferencing.	The flicker setting does not match the standard of the country you are staying.	Adjust the flicker setting. For more information, please refer to the "Flicker Settings" table on page 45.

Appendix:A

☻ **Flicker Settings**

Country	England	Germany	France	Italy	Spain	Netherlands
Setting	50Hz	50Hz	60Hz	50Hz	50Hz	50Hz
Country	Portugal	America	Taiwan	China	Japan	Korea
Setting	50Hz	60Hz	60Hz	50Hz	50/60Hz	60Hz

Note: The flicker setting is based on the frequency standard of your local power supply.

☻ **System Message**

Message	Description
Recording	The camcorder is recording a file.
Please Unlock SD Card	If you insert a SD card and the card is set to "Protected", this message will show up when the camcorder tries to write data into the card.
No File	When the camcorder is set to Playback mode without any existing file to play, this message will show up.
Please Change Battery	The battery life of the camcorder is low. You should replace or recharge the battery immediately.
Memory Full	The storage memory is full and can not store any more files. Please change the SD/MMC card or delete some files to free some memory space.
Card Error	The inserted card is not compatible with the camcorder. Please change the card or try formatting the card.
Memory Error	The camcorder can not access data in the internal memory. Please format the medium to solve this problem.
Strobe Is Charging	The flash strobe is charging.
File Format Error	The file being played is not compatible with the camcorder.
Deleting	The camcorder is performing file deletion.
Formatting	The camcorder is formatting the storage medium.
Setting	The camcorder is performing a setting action.

Appendix:A

❂ **Storage Capacity**

Memory	Video (hh:mm'ss")		Audio (hh:mm'ss") sample rate=8K
	VGA	QVGA	Maximum
Internal (22MB for storage)	1'17"	4'29"	46'03"
SD/MMC card (64MB)	3'44"	13'02"	02:13'45"
SD/MMC card (128MB)	7'26"	26'07"	04:27'33"
SD/MMC card (256MB)	14'55"	52'13"	08:54'55"
SD/MMC card (512MB)	29'48"	01:44'25"	17:49'47"

Memory	Still picture					
	10M	8M	6M	5M	3M	VGA
Internal (22MB for storage)	10	13	18	21	34	278
SD/MMC card (64MB)	29	37	52	61	98	808
SD/MMC card (128MB)	57	72	103	122	196	1615
SD/MMC card (256MB)	114	146	207	243	392	3230
SD/MMC card (512MB)	230	295	416	487	783	6461

Note: The above tables are for your reference only. The actual value of capacity may vary (up to ± 30%) depending on the complexity of your subject and surroundings.

Appendix:A

◉ **Battery Life Indicator**

Icon	Description
▤	Full battery life
▢	Moderate battery life
▯	Low battery life
▭	Empty battery life

Note: To avoid sudden outage of power supply, you are recommended to replace or recharge the battery when the icon indicates low battery life.

◉ **Battery Life**

Still picture	Video clip	Play MP3	Audio record
Number of shots	Recording time (mm'ss")	Playing time (hh:mm'ss")	Recording time (hh:mm'ss")
185	56'19"	1:42'00"	1:56'10"
*shoot every 30 seconds **flash is set on for every other shot ***resolution is set to 2592x1536 dpi	*resolution is set to VGA (640x480 pixels)	*with headphone	*uLaw; 22K

Note: This table is for your reference only. The actual battery life depends on your battery type and recharge level.

Appendix:B

☻ Instruction for ArcSoft MediaConverter™

Introduction

ArcSoft MediaConverter is a powerful all-in-one multimedia file converter. This utility quickly and effortlessly converts photo, video, and music files into formats optimized for use on your portable device. Multiple files and file types can be converted at the same time. It's easy! Three simple steps are all it takes.

❖ System requirements

To install and run the MediaConverter, your system must meet the following minimum requirements:

- Microsoft Windows 98 SE/ME/2000/XP (Home or Professional)
- 50 MB free hard drive space
- 256 MB RAM
- DirectX 9 (DirectX 9c recommended)
- Microsoft Windows Media Player 9.0 (for converting WMA and WMV files)
- Microsoft Windows 98 SE/ME/2000/XP (Home or Professional)
- Apple QuickTime 6.5 (for converting MOV files)

Appendix:B

❖ **Supported file formats**

◘ Video
Video files are converted and copied to the selected location as MPEG-4 encoded AVI files, WMV files or MPEG-4 encoded ASF files (Default).

◘ Supported file types for conversion
- AVI (Microsoft Video 1 format, Cinepak, Intel Indeo, uncompressed, etc.)
- MPEG-1 in MPEG, MPG, MPE
- DAT (VCD MPEG1)
- MPEG-4 in AVI format
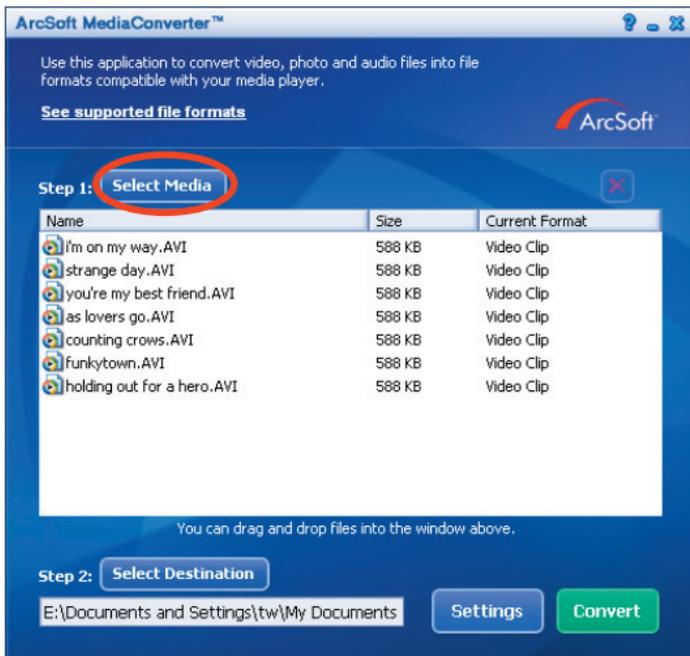- MPEG-4 in ASF
- WMV
- QuickTime MOV

QuickTime 6.5 and Windows Media Player 9.0 or above are required for QuickTime MOV and WMV file conversion, respectively.

◘ Supported file types for export
- AVI (MPEG-4 SP)
- WMV
- ASF(MPEG-4 SP)

Appendix:B

Converting files

Appendix:B

❖ <u>Step 1: Select media</u>

◘ Adding files for conversion

1 Click the "Select Media" button.

2 An "Open" window will appear. Navigate to the folder that contains the files you'd like to convert.

   a. Use the "Files of type" pull-down to filter the file types you'd like to display.

   b. Preview highlighted files to be sure that they're the ones you want. Check the "AutoPlay" box to start the playback automatically after you click a file.

3 Repeat steps 1 and 2 above until all the files you want are added. In addition to using the above method, you can also drag-and-drop files directly to the file list in the program window.
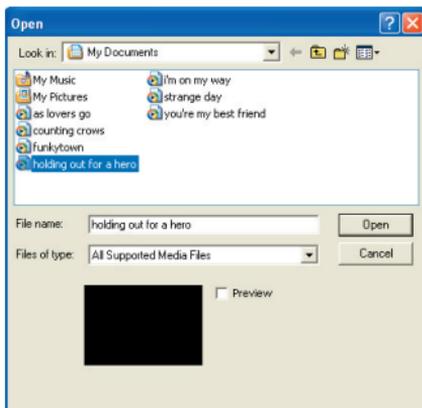

◘ Removing files

To delete a file from the list, highlight it and click the "X" icon.
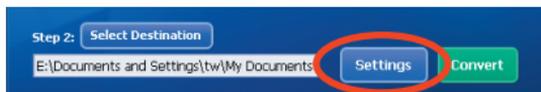
Appendix:B

❖ **Step 2: Select destination**

Click the "Select Destination" button to select the location where
your converted files will be saved. The default save location is "C:\
Documents and Settings\[current user]\My documents". However,
you'll most likely want to save the files to your portable device. In this
case, make sure your device is connected, and then click "Select
Destination" and choose the device.
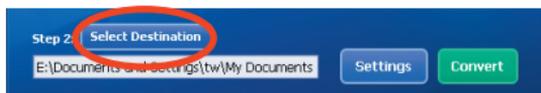
◘ Settings

Various program settings can be accessed by clicking the "Settings"
button. Each section lets you select one of two settings: "Optimize for
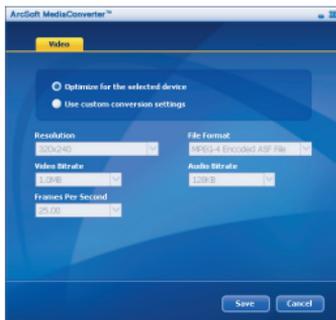the selected device," and "Use custom conversion settings."

Appendix:B

◘ Optimize for the selected device

This is the default setting. The program will automatically set the conversion parameters according to your selected device.

◘ Use custom conversion settings
If you decide to use this option, you can set the various conversion parameters manually.

◘ Video settings
When converting a video file, there are several different parameters:
- **Resolution** (Options include QVGA (320 x 240) [default] and VGA (640 x 480))
- **File Format** (MPEG-4 encoded AVI files, WMV files or MPEG-4 encoded ASF files)
- **Video Bitrate** (Options include 500KB, 1.0MB, 1.5MB, 2.0 MB [default], 2.5 MB, and 3.0 MB)
- **Audio Bitrate** (Options include 96 KB, 128 KB [default], 192 KB)
- **Frame Per Second** (Options include [in fps] 15.00, 20.00, 24.00, 25.00 [default], and 29.97)

Selecting "Optimize for the selected device" uses the default values above, where applicable.
After viewing/modifying the various settings, select either "Save" or "Cancel" to return to the main screen. Click "Save" if you'd made changes that you'd like to keep. Otherwise, click "Cancel."

Appendix:B

❖ **Step 3: Convert**

When you're ready, select (highlight) the files you'd like to convert from the list, and then click the "Convert" button.
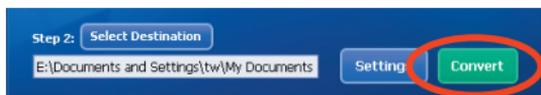
A progress bar will display the current status. Various popups may appear asking for specific confirmation. A popup will appear and inform you once all the files have been converted and stored to the location you selected.

Playing the converted ASF files in your camcorder

To play the video clips or movies (MPEG-4 in ASF format only) converted by ArcSoft MediaConverter in your MPEG-4 digital camcorder, please follow the steps below.

❖ **Step 1**

Insert a SD/MMC card in the card slot of the camcorder and connect the camcorder to PC via the USB cable. You could follow the instructions of "Connecting the camcorder to your PC" on page 35 for more information.

Appendix:B

❖ **Step 2**

Save the ASF files converted by MediaConverter on PC to your
camcorder.
1 Copy the converted ASF files.
2 Open Windows Explorer to find a "Removable Disk" appeared in My
   Computer.
3 Double-click on the icon of Removable Disk.
4 Double-click on the DCIM file folder.
5 Double-click on the 100MEDIA file folder.
6 Paste the files into 100MEDIA file folder.
7 Change the file names to PICT****.ASF.
   **** could be any 4-digit number from 0001 to 9999.

> ❶ The file name must follow the naming principle of your camcorder,
>   so that the camcorder could identify the files saved on 100MEDIA.

❖ **Step 3**

Now you can use the Playback (🎥) mode to enjoy the video clips or
movies on the large LCD monitor!

The ArcSoft MediaConverter in this package is a customized version for
your digital camcorder. You may visit the website http:\\www.arcsoft.com
for more product information.

Appendix:C

☺ Specifications

Main functions:
- Digital Video Camcorder: MPEG4 (ASF) format
- ● VGA (640 x 480 pixels) / up to 30 fps
- ● QVGA (320 x 240 pixels) / up to 30 fps
- Digital Still Camera:
- ● 10 MP (3584 x 2688) pixels
- ● 8 MP (3264 x 2448) pixels
- ● 6 MP (2832 x 2128) pixels
- ● 5 MP (2592 x 1944) pixels
- ● 3 MP (2048 x 1536) pixels
- ● VGA (640 x 480) pixels
- File format: JPEG, ASF, WAV, MP3

- Sensor Effective Resolution: 5 MP (2592 x 1944) pixels
- Interpolated Resolution: 10 MP (3584 x 2688) pixels
- Internal Memory: 22 MB Flash memory (storage)
- External Memory: Built-in SD/MMC Card slot
- Lens: Auto Focus
- Digital Zoom: 4X
- LCD Display: 2.0" Color LCD (115,200 pixels)
- TV-Out: Support NTSC/PAL TV System
- Shutter: Mechanical
- Flash/Strobe: Auto/ On/ Off; Anti-red Eyes (IGBT)
- White Balance: Auto/ Sunny/ Cloudy/ Tungsten/ Fluorescent
- Interface: USB 2.0 (1.1 compatible)
- Built-in Microphone & Speaker
- Battery: Nokia-6108 Li-ion battery (700mAh)
- Dimensions: 28.8 x 58.5 x 88.3 (mm)

Note: Specifications are subject to change without notification.

Appendix:D

● System Requirements

Operating System: Windows 98SE/ME/2000/XP
CPU: Pentium III or above
System RAM: 128MB or above
Graphic Card: 64MB, 24 bit true color
CD-ROM speed: 4x or above
Software: DirectX 9.0c or above and Windows Media Player Codecs
Other: USB Port